

a second step of removing a residual chlorine component deposited on an exposed portion of said lamination layer during said first step, and eliminating debris deposited on a side wall thereof by rinsing the same using at least one liquid; and

a third step of drying the specimen after the rinsing thereof by placing the specimen on a hot plate and by heating the specimen.

2. (Amended) A method of processing a specimen according to claim 1, wherein said second step is executed in continuous succession after said first step.

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3. (Amended) A method of processing a specimen according to claim 1, wherein said gas plasma is generated using at least one of Cl₂, BCl₃, Ar and O₂ gases, or a combination thereof.

4. (Amended) A method of processing a specimen according to claim 1, wherein said second step of liquid rinsing includes one or more than two of the following steps:

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- (A) pure water rinsing,
 - (B) alkaline liquid cleaning followed by water rinsing,
 - (C) acidic liquid cleaning followed by water rinsing,
 - (D) hydrofluoric acid or nitric acid cleaning followed by water rinsing,
 - (E) neutral detergent cleaning followed by water rinsing.

13. (Twice amended) A method of manufacture of a magnetic head having an upper magnetic pole and a lower magnetic pole disposed opposite thereto and including a seed layer processing thereof, comprising the steps of:

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forming a lamination layer comprising a seed layer made of NiFe or NiFeCo alloy, an upper magnetic pole made of NiFe alloy contacted to said seed layer, a gap

layer made of an oxide such as alumina or silicon oxide in contact with said seed layer, and a shield layer made of NiFe alloy in contact with said gap layer;

plasma-etching said seed layer using a gas which contains chlorine with said upper magnetic pole used as its mask;

removing a residual chlorine component by liquid rinsing; and

drying the rinsed body formed by the above steps by heating after placing the same on a hot plate.

14. (Amended) A method of manufacture of a magnetic head having an upper magnetic pole and a lower magnetic pole disposed opposite thereto and including a gap layer processing thereof, comprising the steps of:

C2 forming a lamination layer comprising a seed layer made of NiFe or NiFeCo alloy, an upper magnetic pole made of NiFe alloy contacted to said seed layer, a gap layer made of an oxide film in contact with said seed layer, and a shield layer made of NiFe alloy in contact with said gap layer;

etching said seed layer;

etching said gap layer by plasma processing using a gas which contains chlorine or fluorine with said upper magnetic pole used as its mask;

removing a residual chlorine and/or fluorine components by liquid rinsing; and

drying the rinsed body formed by the above steps by heating after placing the same on a hot plate.

15. (Amended) A method of manufacture of a magnetic head having an upper magnetic pole and a lower magnetic pole disposed opposite thereto and including a trim-processing thereof, comprising the steps of:

forming a lamination layer comprising a seed layer made of NiFe or NiFeCo alloy, an upper magnetic pole made of NiFe alloy contacted to said seed layer, a gap layer made of an oxide film in contact with said seed layer, and a shield layer made of NiFe alloy in contact with said gap layer;

etching said seed layer;

etching said gap layer;

trim-etching said shield layer using a gas which contains chlorine by plasma processing with said upper magnetic pole used as its mask;

removing a residual chlorine component by liquid rinsing; and

drying the rinsed body formed by the above steps by heating after placing the same on a hot plate.

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16. (Amended) A method of manufacture of a magnetic head having an upper magnetic pole and a lower magnetic pole disposed opposite thereto, comprising the steps of:

forming a lamination layer comprising a seed layer made of NiFe or NiFeCo alloy, an upper magnetic pole made of NiFe alloy contacted to said seed layer, a gap layer made of an oxide film in contact with said seed layer, and a shield layer made of NiFe alloy in contact with said gap layer;

plasma-etching said seed layer, said gap layer and said shield layer consecutively with said upper magnetic pole used as a mask; and

applying a corrosion prevention treatment for removal of a residual chlorine component deposited on an etched surface thereof, including rinsing of the body to be treated and drying the same by heating after placing the same on a hot plate.

17. (Amended) A method of manufacture of a magnetic head according to claim 16, wherein said gap layer is etched by gas plasma containing fluorine, said seed layer and said shield layer are etched by gas plasma containing chlorine and argon, and wherein said the rinsing in said corrosion prevention treatment is carried out liquid.

18. (Amended) A method of manufacture of a magnetic head having an upper magnetic pole and a lower magnetic pole disposed opposite to each other, comprising the steps of:

forming a lamination layer comprising a seed layer made of NiFe or NiFeCo alloy, an upper magnetic pole made of NiFe alloy contacted to said seed layer, a gap layer made of an oxide film in contact with said seed layer, and a shield layer made of NiFe alloy in contact with said gap layer;

plasma-etching said seed layer and said gap layer consecutively with said upper magnetic pole used as a mask; and subsequently,

applying a corrosion prevention treatment for removal of a residual chlorine component deposited on an etched surface thereof, including rinsing of the body to be treated and drying the same by heating after placing the same on a hot plate.

19. (Amended) A method of manufacture of a magnetic head having an upper magnetic pole and a lower magnetic pole disposed opposite to each other for manufacturing said upper magnetic pole thereof, comprising the steps of:

forming a lamination layer comprising an upper magnetic pole layer made of NiFe alloy, and a mask layer of a photo resist or an oxide film made of alumina or silicon oxide film which is laminated on said upper magnetic pole;

plasma etching said upper magnetic pole using said mask layer as its mask; and then

applying a corrosion prevention treatment for removal of a residual chlorine component deposited on an etched surface thereof, including rinsing of the body to be treated and drying the same by heating after placing the same on a hot plate.

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20. (Amended) A method of manufacture of a magnetic head having an upper magnetic pole and a lower magnetic pole disposed opposite to each other and including a process for manufacture of said upper magnetic pole thereof, comprising the steps of:

forming a lamination layer comprising, sequentially from above,

- (A) a photo resist film,
- (B) an oxide film layer made of alumina or silicon oxide,
- (C) an upper magnetic pole layer made of NiFe alloy,
- (D) a seed layer made of NiFeCo alloy for bonding said NiFe alloy,
- (E) a gap layer made of an oxide film of alumina or silicon oxide, and
- (F) a shield layer made of NiFe alloy;

carrying out the following plasma etching steps in continuous succession,

(Step 1) etching said oxide film layer using said mask layer as its mask,

(Step 2) etching said upper magnetic pole layer using said 5 oxide film layer as it mask,

(Step 3) etching said seed layer using said upper oxide film layer or said upper magnetic pole layer as its mask,

(Step 4) etching said gap layer using said upper oxide film layer and said upper magnetic pole layer as its mask, and

(Step 5) trim-etching said shield layer using said upper oxide film layer and said upper magnetic pole layer; and after that,

applying a corrosion prevention treatment for removing a residual chlorine component deposited on an etched surface thereof, including rinsing of the body to be treated and drying the same by heating after placing the same on a hot plate.

C2 21. (Amended) A method of manufacture of a magnetic head according to claim 20, comprising carrying out any steps of said plasma etching steps 1-5 in succession, then applying said corrosion prevention treatment for removal of the residual chlorine component deposited on the etched surface thereof.

22. (Amended) A method of manufacture of a magnetic head according to claim 20, comprising carrying out the rinsing/drying process for each step of said plasma etching steps 1-5 for removing a residual chlorine component and a debris on a side wall, said rinsing/drying process being executed in continuous succession within a single unit.
